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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO.       |
|--|-------------|----------------------|--------------------------|------------------------|
| 10/566,033   | 07/14/2006  | Heinz Eichberger     | 20941/0211442-US0        | 9411                   |
| 7278   | 7590        | 06/02/2009           |                          |                        |
| DARBY & DARBY P.C.<br>P.O. BOX 770<br>Church Street Station<br>New York, NY 10008-0770 |             |                      | EXAMINER<br>VAN, QUANG T |                        |
|  |             |                      | ART UNIT<br>3742         | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>06/02/2009  | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/566,033 | <b>Applicant(s)</b><br>EICHBERGER ET AL. |  |
|                              | <b>Examiner</b><br>Quang T. Van      | <b>Art Unit</b><br>3742                  |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/23/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

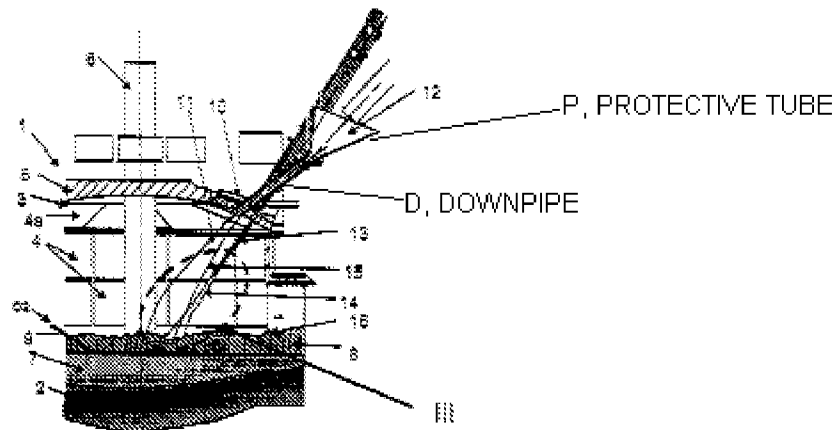
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-2, 4-8, 10, 13, 15, 17, 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittag et al (US 6,477,195) previously cited by applicants, in view of Goss et al (US 3,258,328) new cited. Mittag discloses a process for melting sponge iron and electric-arc furnace comprising the step of charging fine-grained metal (11) into an electric arc furnace (1) in which the metal is supplied essentially continuously via at least one downpipe (D, Figure below) to one or more opening (10) as a bulk material stream, and falls onto the melt merely by gravity, wherein before entering the furnace after the downpipe the bulk material stream is passed through a dosing orifice (12) and enters the furnace essentially undisturbed. However, Mittag

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does not disclose a dosing orifice to control a material flow rate so as to maintain at least a position of the downpipe filled with the bulk material. Goss discloses a dosing orifice having a gate (23) to control a material flow rate so as to maintain at least a position of the downpipe (18) filled with the bulk material. It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Mittag a dosing orifice to control a material flow rate so as to maintain at least a position of the downpipe filled with the bulk material as taught by Goss in order to supply the material to the furnace undisturbed and also control the material stream not enlarged during the fall onto the melt. With regard to claim 8, it is presumed that the protective tube (P, Figure below) is cooled by surrounded air.



4.

5. Claims 10, 13-19 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pantke et al (US 3,634,592) previously cited by applicants, in view of Goss et al (US 3,258,328) new cited. Pantke discloses suction device for an electric arc furnace comprising a furnace roof (1d) having at least one opening (col. 4, lines 47-49) being connected with a downpipe (4) leading to the furnace from outside for supplying

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material to be charged, wherein at the opening of the downpipe into furnace a dosing orifice is provided (figure 1). However, Pantke does not disclose an opening of the downpipe into the furnace an adjustable dosing orifice. Goss discloses an opening of the downpipe (18), which is making by adjustable gate (23), into the furnace an adjustable dosing orifice. It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Pantke an opening of the downpipe into the furnace an adjustable dosing orifice as taught by Goss in order to control a flow of the material into the furnace. With regard to claim 19, it is presumed that the protective tube (10) is cooled by surrounded air.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittag et al (US 6,477,195) previously cited by applicants, in view of Goss et al (US 3,258,328) new cited. Mittag/Goss disclose substantially all features of the claimed invention including the sponge iron (11) in the form of pellets, and /or briquets, and also in the form of fines is conducted into the inside of the furnace via. However, Mittag/Goss is silent about the grain size of less than 1mm, or less than 0.5mm , or less than 0.4mm, or less than 0.3mm. It would have been obvious to one ordinary skill in the art at the time the invention was made to have the grain size of less than 1mm, or less than 0.5mm , or less than 0.4mm, or less than 0.3mm. Since the smaller grain size the easy to treat when flows into the furnace.

7. Claims 3, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittag et al (US 6,477,195) previously cited by applicants, in view of Goss et al (US 3,258,328) new cited, and further in view of Reuter et al (US 3,379,426). Mittag/Goss

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disclose substantially all features of the claimed invention except the material stream passed through an iris. Reuter discloses a material stream passed through an iris (col. 4, lines 46-55). It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Mittag/Goss a material stream passed through an iris as taught by Reuter in order to control the flow of the material.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pantke et al (US 3,634,592) previously cited by applicants, in view of Goss et al (US 3,258,328) new cited, and further in view of Reuter et al (US 3,379,426). Pantke/Goss disclose substantially all features of the claimed invention except the material stream passed through an iris. Reuter discloses a material stream passed through an iris (col. 4, lines 46-55). It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Pantke/Goss a material stream passed through an iris as taught by Reuter in order to control the flow of the material.

### ***Response to Amendment***

9. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T. Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 5:00Pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang T Van/  
Primary Examiner, Art Unit 3742  
May 30, 2009

Quang T Van  
Primary Examiner  
Art Unit 3742